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THE DRIVING CLOCK OF THE 36-INCH EQUATORIAL.

Apropos of a recent discussion in the *Observatory* concerning the power required to drive equatorial telescopes, I will give the data for the driving clock of the 36-inch telescope.

A weight of 810 pounds falls through 17.4 feet, and propels the telescope 131 minutes. This is equivalent to  $\frac{1}{307}$  horse power. The power really required is much smaller than this, as is shown by the fact that the clock alone requires about  $2^m 20^s$  to pass from rest to full speed, while only  $2^m 30^s$  are required when the clock is clamped to the telescope. W. W. C.

COMET *b*, 1893.

The bright comet visible in July—the photographic and spectroscopic observations of which are described elsewhere in this number—was discovered independently by a large number of people. The telegrams notifying American observatories of the discovery gave the credit to Mr. ALFRED RORDAME, an amateur astronomer of Salt Lake City, Utah, who detected it by naked eye at 10 P. M. of July 8. He immediately notified Dr. SWIFT of Rochester by telegraph, who verified the discovery the next evening. Two gentlemen of Alta, Iowa, Messrs. JOHNSON and MILLER, claim to have seen it about 8:30 P. M. of July 8, but their announcement did not reach astronomers till several days later. On July 9 it was discovered independently by Mr. QUÉNISSET of Juvisy Observatory, France; by Mr. FILMER of Faversham, Kent, England; by Professor BOSS of Albany; and by several others.

Late in August American astronomers learned from a published note by the director of the Madrid Observatory that the comet had been discovered on the morning of July 5 at Logrosan, Spain, by Mr. ROSO DE LUNA, who considered it to be a *new star* of the fourth magnitude, in the constellation *Auriga*, without, unfortunately, attaching to the discovery the importance which it merited. A letter by the discoverer, date Logrosan, July 6, received at the Madrid Observatory July 8, called attention to the “new star,” and located it, by means of a chart enclosed, with reference to the surrounding stars. Cloudy weather at Madrid prevented a verification of the discovery. From the orbit of the comet, now well determined, it has been found that the position

which the comet must have occupied on the morning of July 5 is identical with that occupied by ROSO DE LUNA'S new star, and there is no doubt of the identity of the two objects.

On July 11 the nucleus was of about the third magnitude, since when it has steadily and rapidly decreased, until now the brightness is less than one per cent. of that at discovery. On July 17 the nucleus was much more condensed than I had observed it on any date between July 11 and 16.

The comet was nearest to the Sun on July 7, its distance being about 0.67 of the Earth's mean distance from the Sun.

W. W. C.

#### THE FRENCH ECLIPSE EXPEDITION TO SENEGAL.

M. DESLANDRES of the Paris Observatory and chief of the French expedition to Senegal to observe the solar eclipse of April 16, has communicated to the French Academy the principal results obtained on that expedition.

Aside from the photographs of the corona with several short cameras, which were successful, the observations were wholly spectroscopic. The spectrum of the corona was photographed as far up in the ultra-violet as the ordinary solar spectrum extends, and at least fifteen new coronal and chromospheric bright lines were detected. The light of the corona consisted of a strong continuous spectrum and bright lines. None of the ordinary solar dark lines were observed.

Another spectroscope was so arranged that the spectra of two portions of the corona on opposite sides of the Sun were photographed side by side. The two portions selected were situated in the plane of the solar equator, each about two-thirds of a solar diameter from the Sun's limb. Now the lines in the two spectra show a slight relative displacement, which M. DESLANDRES finds to correspond to a difference in the velocities of the two portions, relative to the observer, of from 5 to 7.5 kilometres. The conclusion drawn from this is that the corona is rotating about the solar axis from west to east along with the rest of the Sun, and at nearly the same rate.

These spectroscopic observations had never been attempted at previous eclipses, and we await with intense interest the publication of M. DESLANDRE'S final and full report. His experience in Senegal will undoubtedly be consulted by all who will form programmes for future eclipses.

W. W. C.